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REMARKS

Claims 10-15 are presented for examination in this Continuation application. Reconsideration is respectfully requested. Claims 1-9 were cancelled in a previous action. Claim 10 has been amended to more accurately define the invention.

Claims 10-15 stand rejected under 35 USC 103(a) as being unpatentable over Homan et al., U.S. 5,492,005 in view of the paper "Pollutant Formation and Interaction in the Combustion of Heavy Liquid Fuels" by de Blas. However, there are substantial differences between the amended claimed invention and the cited prior art. These differences are discussed below.

The present invention is a method to determine the tendency of refinery feed stocks to foul the surfaces of refinery equipment. It does not include finished products, products that have already been refined or additized to meet commercial specifications. It does not include fuel with fuel additives.

In a refinery, however, before finished products are generated, care must be taken to control the tendency of several types of molecules in the refinery streams from undergoing undesirable side reactions, e.g., thermally or oxygen (in air) induced oligomerizations/polymerizations that lead to species becoming insoluble and eventually laying down insoluble deposits refinery equipment. It is these potentially fouling feed stocks that the present invention evaluates.

The present invention is not the same as that described in Homan. Homan discloses a system and method to rate fuel and fuel additives. These are finished products and products that include additives. The rating is done to determine performance in an internal combustion engine. The present invention does not include products that include additives.

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de Blas considers the combustion of heavy distillate fuels (finished products) intended for gas turbine engines with respect to their NO_x and SO_x formation capability during combustion (p. 5). These products are gaseous products of combustion. de Blas does not measure solid products. Any solids are filtered out before the fuels are sent to gas turbine engines. The Examiner says that de Blas teaches that it is known to test fuel oils for the presence of particulates or deposits. This is correct. The presence of solid particulates or deposits in heavy distillates, especially those derived from a coking process, is well known. Fine coke particles that are carried over from the coker and present in the distillate must be scrupulously filtered or refractionated to remove the solids, otherwise gas turbine engines will fail.

In contrast, the present invention does not determine the fouling of gaseous products of combustion nor finished products. It does determine the fouling of fuel with additives. The present invention determines under what conditions there is a potential/tendency for a refinery stream to form undesirable deposits (not coke) if it is not handled properly or treated properly in the refinery. For example, if exposure to air cannot be avoided, then the impact and effectiveness of additives that prevent reaction of organic molecules with air is assessed by this invention. There is no comparable test available in the industry.

Applicants believe that the claims now present in this application to be patentable and that this application is in condition for allowance, and such favorable action is respectfully requested. If any questions or issues remain, the resolution of which the Examiner feels would be advanced by a conference; he is invited to contact Applicants' attorney at the telephone number noted below.

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Very truly yours,



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☐ Pursuant to 37 CFR 1.34(a)

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